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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,177	08/01/2003	Kevin Gordon JR.	STE-023.01	4889
25181	7590	06/30/2005	EXAMINER	
FOLEY HOAG, LLP PATENT GROUP, WORLD TRADE CENTER WEST 155 SEAPORT BLVD BOSTON, MA 02110			Koch, George R	
			ART UNIT	PAPER NUMBER
			1734	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/633,177	GORDON, KEVIN
	Examiner George R. Koch III	Art Unit 1734

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 5/27/2005.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-30 is/are pending in the application.  
 4a) Of the above claim(s) 16-30 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-15 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date 5/27/2005.

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-10, 12, and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peter (US Patent 4,631,685) in view of the translation of DE 34 39 776, and the Picchio Reference (IDS, 5/27/2005).

Peter discloses a method for ultrasonic welding of parts by means of an ultrasonic welding device comprising at least a generator (supply 62 and interface 66), a converter (head 46), and a sonotrode (horn 48), based on a set curve of a time dependent welding parameter appropriate to a welding connection meeting set requirements (for example, as shown in Figure 5), and where the welding duration corresponding to the set curve runs between a starting time  $t_0$  to an end time  $t_e$  (in Peter, this is referred to as time  $t_4$ ). Peter also discloses comparing actual data with the set curve (see columns 3 and 4), but does not disclose comparing an actual curve, and does not disclose, depending on the existing difference between the set curve and the actual curve, of at least one welding process parameter affecting welding being altered to a value based on that existing difference such that an equalization of the set curve and the actual curve occurs during further welding.

However, one in the art would appreciate that curves and data points are interchangeable in a control environment, especially one that uses a PC as in

applicant's specification. Since a PC (see applicant's Figure 6) cannot literally compare curves, and merely stores data points and processing operations that represent a curve, the language of comparing "curves" is being interpreted as meaning comparing data points representing curves. Therefore, Peter, which discloses monitoring data parameters to set data parameters which is, since data points represent curves, also an actual curve comparison with set curve. Therefore, Peter is being interpreted as disclosing actual curves being compared with set curves. Furthermore, DE 34 29 776 discloses comparison of actual welding energy curves with set welding curves. DE 34 29 776 discloses that these comparisons ensure proper quality control (see page 1 of the translation). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized set curve to actual curve comparisons as in DE 34 29 776 in order to ensure proper quality control.

Furthermore, Picchio discloses that it is known, in response in the monitoring of the welding parameters (Page 84, 2<sup>nd</sup> column, 1<sup>st</sup> paragraph, see translation on page 3 of the comments filed with the 5/27/2005 IDS), that the method of operating the ultrasonic machine can include steps of amending the welding time and energy. This would often result in an equalization of the set to actual curve, and Picchio further discloses that this operation mode or method would reduce considerably the percentage reject rate by ensuring equalization of the welding energy. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized equalization in order to reduce the percentage reject rate.

As to claim 2, 3 and 4, DE 34 29 776 and Picchio (see page 3 of the remarks filed with the IDS) as incorporated compares and compensates the actual curve with the set curve for all times between the start and finish. As a result of this, the references would compare for identical power values and identical energy inputs.

As to claim 5, Peter discloses changing at least one process parameter (see abstract for disclosure of changing the displacement). Furthermore, DE 34 29 776 and Picchio as incorporated discloses adjustment based on actual curves to set curves, via a hardware control system.

As to claim 6, the result of the incorporation of the hardware control system of DE 34 29 776 and Picchio in claim 1 above is to change the process parameters gradually over time as a result of the measurement, or compensation, for heat loss.

As to claim 7, Picchio's time and energy control method is a regulation process.

As to claim 8, Peter makes successive measurements which are used as inputs to changing the functioning.

As to claim 9, Peter (columns 3-5), DE 34 29 776, and Picchio as incorporated disclose the concept of measuring a parameter at various time-points. Picchio as incorporated discloses utilizing a regulation process, and DE 34 29 776 discloses comparison of a set curve to actual curve comparison (as shown in Figure 5).

As to claim 10, Peter does not suggest measuring the emitter/received power as the time dependent welding parameter. However, Peter does measure energy (which is related to power) against the time (signals 68 and 69). Furthermore, DE 34 29 776 discloses that controlling based on the emitted/received power allows for improved

quality control (see columns 3-5, especially column 5, lines 4-48, which model in hardware the structures for heat compensation, based on power). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized a power control system as by DE 34 29 776 in the apparatus of Peter in order to ensure proper energy supply to the weld pieces in order to achieve a good weld result.

As to claim 12, Peter modifieds a welding parameter singly (the welding displacement).

As to claim 14 and 15, DE 34 29 776 and Picchio as incorporated would allow for the welding to be regulated over its full duration, including at least a part of its duration, based on the respective current difference between the set curve and actual curve.

3. Claims 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peter, DE 34 29 776 and Picchio as applied to claim 1 above, and further in view of Grewell.

As to claim 11, Peter suggests changing the welding displacement. Furthermore, DE 34 29 776 and Picchio as incorporated utilizes the changes resulting from measuring the power to change the energy supplied to the sealing jaws which also relates to the force acting on the parts and the energy input into the parts welded. However, the references do not suggest all of the variables.

Grewell '706 further suggests varying the motional amplitude (i.e., amplitude of the sonotrode - see columns 1-3) and also discloses varying the frequency (see Figure

6, which shows the frequency being varied). Grewell '706 suggests that variation of the amplitude and frequency results in a stronger weld. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the claimed variables in order to achieve a stronger weld.

As to claim 13, Grewell '706 (see Figure 6) as incorporated in claim 11 above suggest modifying both the frequency and amplitude jointly in order to achieve a stronger weld.

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.
5. DE 34 29 776 and Picchio disclose the concepts of measuring set curves versus actual curves, and equalization/regulation of the variables.

### ***Conclusion***

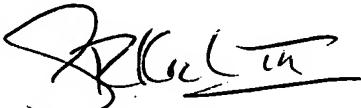
6. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 5/27/2005 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609(B)(2)(i). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George R. Koch III whose telephone number is (571) 272-1230 (TDD only). If the applicant cannot make a direct TDD-to-TDD call, the applicant can communicate by calling the Federal Relay Service at 1-866-377-8642 and giving the operator the above TDD number. The examiner can normally be reached on M-Th 10-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



George R. Koch III  
Patent Examiner  
Art Unit 1734

GRK  
6/19/2005